

UNITED STATES OF AMERICA
DEPARTMENT OF ENERGY
- - - - -
NUCLEAR INFRASTRUCTURE
PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT
- - - - -
SCOPING MEETING
- - - - -
WEDNESDAY, OCTOBER 27, 1999
- - - - -

The meeting was held in Salon C of the Marriott at Metro Center,
775 12th Street, N.W., Washington, D.C., at 2:00 p.m.

PRESENT:

JIM PARHAM, Facilitator

U.S. Department of Energy (DOE Headquarters)

COLETTE BROWN, PEIS Project Manager
Office of Nuclear Energy, Science and Technology
SHANE JOHNSON, Program Manager
CHRIS KARIS

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PROCEEDINGS

THE FACILITATOR: Are there any clarifying questions on the presentation that you may have? Are there any questions that you would like to follow up Colette's presentation? Any questions at this time?

Yes, sir. Please. When you come up to give the question, we need it at the microphone for sure.

QUESTION AND ANSWER SESSION

MR. CLEMENTS: Yes. I am Tom Clements with the Nuclear Control Institute here in Washington. I didn't see on the overheads or hear you discussing the issue of importation of isotopes from other countries. As you know, the Nuclear Regulatory Commission with some DOE involvement has just gone through a big process to export HEU targets with a goal to use LEU targets in reactors in Canada. Canada supplies a large majority of technetium to the United States. But I didn't see that included at all.

Are you saying that it's going to become U.S. policy to be self-reliant in medical isotopes? Is that what I can read from this?

MS. BROWN: No. As you know, we import I guess over 90 percent of our reactor-produced medical isotopes. I am sure that we would continue to import medical isotopes from Canada and other countries.

The point here is to try to establish a reliable domestic supply to meet future growth and demand. But that's not to preclude our future importation of medical isotopes from other countries.

MR. CLEMENTS: Okay. I just didn't see that mentioned in any alternatives.

THE FACILITATOR: Okay. Thank you. Good question.

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1 Yes, sir. Right here, if you would step up to the mike.

2 MR. LEE: Okay. My name is Hyun Lee. I am with Heart of
3 America Northwest.

4 In the Notice of Intent for the PEIS, it didn't mention anything
5 about external regulation of the FFTF reactor. Is that going to be discussed in
6 the final EIS at all?

7 MS. BROWN: That is a policy decision that is being entertained
8 by the Department as a whole right now. I don't see it being addressed
9 specifically in this PEIS. It may be addressed as part of the record of decision,
10 but not specifically the PEIS.

11 MR. LEE: Now it's my understanding that Secretary O'Leary
12 back in December of 1996, made a commitment to Congress that DOE's civilian
13 research reactors that weren't weapons-related would be shifted over to an
14 external regulation by the Nuclear Regulatory Commission. Is that still in
15 effect?

16 MR. JOHNSON: I don't believe that Secretary O'Leary made any
17 final decision on external regulation of DOE nuclear safety. What the Secretary
18 did was to say that that was a very viable alternative for the Department to follow
19 in the future, and actually setting course, I believe it was three pilot projects that
20 were conducted with the NRC and DOE at three different sites within the DOE
21 complex. The Department is currently looking at the result of that and has not
22 made a decision one way or the other whether to proceed with our external
23 regulation or to stay the course with DOE regulation.

24 MR. LEE: So it's not certain whether FFTF is going to be
25 externally regulated at all or just self regulated?

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1 MR. JOHNSON: That decision has not been made.

2 THE FACILITATOR: Thank you. Additional questions you
3 may have?

4 Yes, could you step to the microphone? I know it's a long way,
5 but we would like to get it on the record for sure.

6 MS. HAUTER: I am Wenonah Hauter with Public Citizen.
7 Your comment period is extremely short. Are you considering extending it at
8 all so that there can be a real public debate?

9 MS. BROWN: It was not my intention to extend it. The
10 comment period started on the 15th of September with a release of the Notice
11 of Intent. It is 15 days longer than the requirement. We have received some
12 concerns about the length of it. If you want, we can talk off-line about what kind
13 of situation you might be in personally that I can maybe work with, but we're not
14 extending -- we're not making a public announcement about extending the
15 comment period.

16 MS. HAUTER: And a second question. How does the use of
17 cesium-137 and cobalt-60 for food irradiation play into your strategy?

18 MS. BROWN: Cobalt-60 and cesium-137 are two of the many
19 isotopes that are on our list that will be required in the future. It is my
20 understanding that the Department of Agriculture has not come out and made a
21 publicly-available policy on food irradiation. Until such a time as they do, we
22 will follow their lead. But it's certainly within the envelope of isotopes that we
23 anticipate needing to produce in the next 35 years.

24 THE FACILITATOR: Thank you. Additional questions at this
25 time?

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1 MS. CRANDALL: I am Katherine Crandall with the Alliance
2 for Nuclear Accountability. There are going to be some real proliferation
3 impacts just from looking at the fuel that this facility requires. Have you
4 considered doing a nonproliferation study?

5 MR. JOHNSON: Yes. The Department will be conducting a
6 nonproliferation study. That study is being led by our Office of Non-
7 proliferation and National Security.

8 MS. CRANDALL: Could you just tell me a little bit about what
9 the process and their timeline is, and how it works in conjunction with the EIS?

10 MR. JOHNSON: Well, I work in the Office of Nuclear Energy.
11 Actually the nonproliferation study is being done by a different office, so we're
12 not really in control of their schedule. However, they are working with us to
13 have their nonproliferation study completed in time to be released with the draft
14 of PEIS in May next year. The specific details in terms of how they plan to
15 conduct the study, the particular mechanisms they are going to follow, I don't
16 have those details, but I could get them for you.

17 THE FACILITATOR: Thank you.

18 Any additional questions? If not, let's move to the comment
19 period. What we would like to do is, as I said earlier, we'll take elected public
20 officials first, Federal, State, city, local, and then move into public comments.
21 Five minutes for individuals and 10 minutes for elected officials or
22 representatives of organizations. We'll do that by a show of hands randomly.
23 I don't know you, you don't know me, so we'll just pick people as we get a
24 chance. A show of hands will work. Then we'll move through the comments
25 section and finish up that way, if that's okay.

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1 So I believe there's a couple -- I'll start with Federal elected
2 officials, Federal representatives, congressmen, senators. I think we have a few
3 people here.

4 Yes, sir? Come on up to the microphone, if you would.

5 **COMMENT SESSION**

6 MR. MARKEY: I am Jeff Markey. I am Congressman Doc
7 Hastings' legislative director. I am going to read his statement as he wrote it.

8 Thank you for the opportunity to share my views with you this
9 afternoon. Most of us know someone with cancer or have seen a loved one
10 suffer from cancer. Recent developments in the medical isotope field suggest
11 that our ability to combat deadly cancer strains will be revolutionized by these
12 new isotopes. That is why I believe it is vital for the programmatic
13 environmental impact statement to consider the benefits provided by the
14 production of medical isotopes at FFTF during the scoping.

15 Section 31 of the Atomic Energy Act requires the Federal
16 Government to maintain research and production quantities of isotopes. The
17 FFTF has the unique ability to produce a steady stream of different medical
18 isotopes simultaneously in one reactor. FFTF offers the added benefit of
19 allowing the Government to meet its statutory requirements at a low cost to
20 taxpayers.

21 The growing research field surrounding medical isotopes has
22 tremendous potential to improve the lives of millions of people worldwide.
23 There are many highly successful clinical trials in the treatment of several major
24 classes of cancer and other medical problems. Medical isotopes offer innovative

1 new ways to treat cardiovascular disease, arthritis, and other rheumatic
2 conditions.

3 Restarting the FFTF would increase the reliability and diversity
4 of medical isotopes, while stabilizing the supply of these promising disease-
5 fighting tools. The rapid growth of this field could support the majority of the
6 cost to operate the reactor. It is vital the EIS take into account the growth of
7 medical isotope treatment options and the corresponding increase in this market.
8 Further, the EIS should determine the amount of future healthcare costs that
9 would be avoided by using these isotopes.

10 The PEIS should also include the benefits of increasing the
11 Federal program on isotope production, not only in medicine, but also the supply
12 of radioisotope that are essential for biological and agricultural research, food
13 irradiation, and numerous other industrial uses that would benefit the entire
14 nation. Because cost is an essential component of the decision on the FFTF's
15 future, it is important to consider the costs associated with restarting FFTF in
16 comparison with the costs of constructing a similar reactor or new alternatives,
17 such as accelerators, to conduct FFTF's mission.

18 The United States spent over \$1 billion on FFTF to make it a
19 premier facility. I am confident that FFTF is capable of fulfilling a majority of
20 our future nuclear infrastructure needs at a lower cost to American taxpayers
21 than the other options.

22 Further, the PEIS must include a detailed account of the benefits
23 provided for research and education. We must ensure that this Nation maintains
24 the ability for American students to learn firsthand the challenges associated

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1 with nuclear reactors. Research is an essential component to ensure further
2 development in the nuclear field.

3 I appreciate the opportunity to provide the Department with these
4 recommendations for inclusion in the PEIS. I hope the EIS provides an
5 authoritative, objective account of all issues surrounding the nuclear
6 infrastructure of the United States and the benefits provided to all Americans
7 through the use of medical isotopes to treat the world's deadliest and most
8 debilitating diseases. I look forward to working with the Department throughout
9 the EIS process. Thank you for allowing me to submit my comments.

10 THE FACILITATOR: Thank you. I appreciate that. Hand a
11 copy to Charlotte there, if you would. Thanks.

12 Any other federally elected officials or representatives of such?

13 Now we'll move to any State elected officials. Public officials
14 from the States. Then city or county. No?

15 Okay. Thank you, Jeff, for coming up. We appreciate it. You
16 got a copy of that I think to Charlotte, so thank you for that.

17 Okay. Let's move to the public comment period. Again, it's five
18 minutes for individuals and 10 minutes if you are a representative from an
19 organization. Chris is ready, we're ready. So we'll ask you to step up to the
20 mike again. So anyone who would like to comment, if we could just see a show
21 of hands. Let's start over here.

22 MS. HAUTER: I am Wenonah Hauter. I am director of Public
23 Citizen's Critical Mass Energy Project.

24 There are many reasons not to restart the FFTF, including
25 wasting taxpayer money and creating more deadly nuclear waste. I would like

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1 to limit my comments to three areas though, the creation of radioactive isotopes
2 for food irradiation, the creation of more orphan sources, and health and safety
3 concerns.

4 First, there is overwhelming evidence that Americans are not
5 going to buy irradiated food. If they do buy irradiated food, the likelihood that
6 radioactive isotopes, cesium 137 and cobalt 60 are likely not to be used.

7 A poll that CBS conducted in 1997 showed that 73 percent of the
8 public opposes food irradiation, 77 percent of the public wouldn't eat irradiated
9 food. Now even though the nuclear and food industries are trying to do in
10 labelling so that people don't know that they are eating irradiated food, even the
11 likelihood that that is going to move forward, we don't think it is going to
12 happen.

13 Recently, when the FDA was accepting comments about letting
14 labelling expire, they received about 20,000 comments. A recent poll that
15 AARP conducted showed that 86 percent of Americans want irradiated food
16 labelled. People are very suspicious of having their food treated with radiation.
17 So we don't see that there is going to be much of a market for these radioactive
18 isotopes.

19 Even the big food or meat producers that are moving forward to
20 test market irradiated food are using a technology called the E-beam, which
21 doesn't use radioactive isotopes. In my written comments, I cite an article of the
22 Wall Street Journal, a recent article, that shows that the E-beam is what would
23 probably be used if food irradiation happens at all.

24 My second comment has to do with the creation of more sealed
25 sources of radiation. I wonder if DOE is coordinating at all with the

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1 Environmental Protection Agency, which has an orphan source initiative to try
2 to collect, round up all of the orphan sources that are rattling around out there
3 and creating terrible problems for the metals industry. These orphan sources end
4 up in facilities that are smelting metal and they cause unbelievable
5 contamination. This happens two or three times a year. What happens is the
6 source is licensed, but then it isn't tracked. It ends up being recycled.

7 So the idea that we are going to create more sources or sealed
8 sources that are going to be rattling around is very problematic. I think that there
9 should be some kind of coordination with EPA. I was at a meeting recently, I
10 asked EPA if they knew that you were moving ahead with this initiative. The
11 people at the meeting said no, from the radiation section of EPA.

12 My third point is that there is incredible environmental pollution
13 at Hanford. DOE should be focusing all of their effort on cleaning up the mess.
14 Four hundred and forty-four billion gallons of radioactive and chemical waste
15 that spilled into the soil, hundreds of billions of gallons of waste water
16 discharged directly into the Columbia River. Rather than restarting a facility, the
17 focus should be on cleaning up the problems that are already there.

18 Finally, fast breeder reactors are inherently dangerous. They are
19 even more dangerous than other types of reactors. The FFTF uses sodium rather
20 than water to cool the reactor. Sodium burns when it's exposed to air and
21 explodes upon contact with water. The rapid increases in power, like the power
22 excursion that blew apart the Chernobyl reactor, occur much more rapidly in a
23 fast breeder reactor. Fast breeder reactors are particularly susceptible to power
24 instability due to the fact that they operate at higher power density.

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1 We all know the U.S. experience with these fast breeder reactors.
2 The accident in 1955 when there was a meltdown during testing, a second
3 accident when the consortium of 35 utilities headed by Detroit Edison also
4 melted down at Fermi. Other countries have experienced similar accidents,
5 including France and Japan.

6 So we believe that overall, it is a misguided attempt to restart this
7 dangerous reactor. What it really amounts to is a welfare program for the
8 nuclear establishment.

9 We would also urge you to extend your comment period for
10 citizens. There should be real debate about these issues. This shouldn't just take
11 place behind closed doors when people don't really know what's going on. For
12 us to get the word out to our communities takes time. We don't have hundreds
13 of staff to do our work. So I hope that you will extend the comment period.

14 THE FACILITATOR: Thank you. I appreciate it. If we could
15 get your comments. Go to him, and then right here after that. The gentleman in
16 the red tie, and then the gentleman in the gray. You, sir. You're it. You are in
17 the red tie. Then to the gentleman in the gray suit, right here. Thanks.

18 MR. GERLINGS: My name is Maurice Gerlings. I'm with
19 Forum Actinium. I used to work with Memorial Sloan-Kettering Cancer Center.
20 Right now I work within private industry, representing the private industry's
21 interest in stepping in as of today in effect with millions of dollars ready to
22 support the procurement of radioisotope based on the alpha particles therapy.

23 The work that I am referring to is now being conducted at Sloan-
24 Kettering for the treatment of leukemia, AML, where we are using bismuth-213.

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1 Bismuth-213 is a daughter isotope of actinium-225, which in turn is a daughter
2 isotope indirectly from uranium-233.

3 Uranium is now being stockpiled at Oak Ridge and serves as a
4 source material for the actinium-225, which is a very safe material that is being
5 sent to the hospital to serve as a generator for the medical isotope.

6 We have conducted a phase I clinical trial and completed it with
7 extremely positive results, to the tune that we have been able to motivate in
8 general private industry to step in for a very serious commitment to support
9 further development, and particularly the development towards the procurement
10 of the isotopes.

11 We have, during the past years, intensively worked with the Oak
12 Ridge National Lab, and also with Sloan-Kettering, to work out all the logistics
13 and to make sure that everything is being handled safely. We have had FDA at
14 our site to make sure that they are in effect satisfied with the handling and the
15 administration of the drug.

16 Right now, as we are ready to enter into phase II for AML, we
17 also started additional research for prostate cancer, non-Hodgkins lymphoma,
18 breast, and ovarian cancer, all of the diseases that now can severely benefit from
19 a fast track development process into a market entry.

20 The current concern right now is mainly the future demand
21 within the medical community. That put aside with the private industry's
22 necessity to hear from the DOE that they can have commercial access to the
23 DOE.

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1 Within that framework, the private industry has proposed a plan
2 to help the DOE with two major issues. One, to procure the isotope, medical
3 isotope from uranium-233, and benefit service to medical community.

4 The second one is to assist the DOE to get rid of the nuclear
5 criticality that now is relevant to the uranium-233 by means of a downblending
6 and stabilizing process. That means that in the end, we will have a final product
7 that is not nuclear critical anymore. It doesn't allow for potential hazards like
8 recently what happened in Japan.

9 Finally, to provide the source for at least 100,000 patients yearly,
10 which is consistent with the market demand, at least for the next five to ten
11 years.

12 Then additionally, we will look at other sources for the
13 production of actinium-225. But for the moment, this is the cheapest and the
14 fastest way.

15 One last note is that with reference to years ago, where DOE, in
16 fact the U.S. Government, faced an embarrassment with respect to what foreign
17 countries could reach with the production of isotopes, now the European
18 community are considering seriously producing the isotopes. However, their
19 methodology will take more time and more financial resources. Therefore, I
20 would encourage the DOE to consider the use of right now the uranium-233 as
21 a source because that's the cheapest and fastest way to produce.

22 This is just a note of awareness. I hope that we can further
23 extend the dialogue and primarily with more awareness within the DOE, we can
24 expedite the plan as now proposed to the DOE.

25 Thank you.

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1 THE FACILITATOR: Thank you.

2 MR. GALLAGHER: My name is Robert Gallagher. I wouldn't
3 be speaking to you were it not for the benefit of radiation radioactivity diagnosis
4 therapy and the research and development that I have spent my entire career
5 trying to find better ways to use radiation and radioactivity.

6 It's quite refreshing to have the personal opportunity to see this
7 misinformation dispensed like we have just heard, because it thwarts the use of
8 radiation for the diagnosis of cancer and treatment. Misinformation by this
9 young lady here does such a devastating thing because it's so easy for us to be
10 against something. If you are for something and you have survived because of
11 that, you seem to have an ax to grind, something to say for your personal benefit.

12 I am proud of the fact that I have received radiation, that I got my
13 education through the Atomic Energy Commission to become one of the first
14 health physicists in the country. I decry the opportunity for people to use public
15 forum to dispense such garbage.

16 I would like to say that everything that we do is so important
17 about using the benefits of radiation and telling people the facts, not dispensing
18 fiction. I just love to follow your footsteps, every one of them, until the end of
19 time. Thank you.

20 THE FACILITATOR: Okay. Additional comments? The
21 gentleman with the white and brown hair.

22 MR. CHAPUT: I'm sensitive about my hair at the moment. It's
23 not radiation. Natural aging process.

24 My name is Ernest Chaput. I am with the Economic
25 Development Partnership of Aiken, South Carolina. The Department of Energy,

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1 Savannah River site is located, partially located in Aiken County, South
2 Carolina.

3 One year ago, the partnership prepared an abbreviated business
4 plan for the production of medical isotopes. We prepared that plan for
5 consideration by the Department in their evaluation of tritium supply options.
6 In preparing a plan, we became very impressed with the significant healthcare
7 benefits that could result from the ongoing research of using isotopes and
8 medical diagnostics and medical therapeutic procedures.

9 However, we were equally concerned with the lack of an isotope
10 production infrastructure that would produce the needed isotopes at acceptable
11 prices. We are pleased to see that DOE is examining options for the next 35
12 years in this programmatic EIS, because our reviews indicate that a significantly
13 larger and more efficient production infrastructure must be in place within the
14 next seven to ten years. It is in that context that I speak today.

15 One year ago, as I mentioned, we made an estimate of future
16 demand for medical isotopes based upon the potential results of medical research
17 that's currently ongoing. In preparing this estimate, we talked to the medical
18 researchers actually doing the work, what diseases they were working on, what
19 isotopes they were using, how much isotopes would be required for their
20 procedures, the problems they were having or not having in getting isotopes,
21 how it compared with some of the other alternative medical modalities that are
22 currently in research. We tried to understand what the thrust was going to be of
23 their research.

24 We reviewed the promising medical procedures that are either
25 in research or in clinical trials, and estimated the demand if individual research

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1 efforts proved successful and were approved for routine clinical usage. In other
2 words, they made it through the FDA process and the medical community
3 accepted them as a day-to-day operation.

4 In general, the current research has these four attributes. First,
5 in many cases, it has the ability to treat that which is currently untreatable,
6 lymphomas and things like that, which currently tend to defy normal surgical
7 procedures and are hard to deal within a chemotherapy, medical isotopes can
8 deal with.

9 It can provide medical options of greater efficacy, more effective
10 as far as treating the diseases, provide options for less intrusive medical
11 procedures, with less patient side effects, and can reduce the cost of some
12 medical procedures.

13 Using conservative assumptions, we estimated that an additional
14 two million people annually could benefit and over 900,000 curies of medical
15 isotopes, new medical isotopes, would be required to support the 10 or 15 lines
16 of medical research that we propose -- that we examined. Revenues would be
17 in excess of about \$500 million a year.

18 Now many of these new procedures are therapeutic applications
19 that require large quantities of isotopes that are available today only in small
20 research quantities and at very high prices.

21 Our evaluation also concluded that significant public health
22 benefits would only be required if the required isotopes are available at an
23 affordable price. That is, a price that is competitive with alternative medical
24 procedures or are within the constraints of the cost constraints of the healthcare
25 industry. In general, this means that the cost of isotopes must be significantly

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1 reduced from current levels. For example, isotopes that currently cost thousands
2 of dollars per millicurie must become available at \$1,000 per curie.

3 Specific examples, indium-111, being looked at for cancer
4 therapy. Currently it is available if you can find it, at about \$1,000 a millicurie.
5 If the current research is successful, a regime of treatment would take about 400
6 millicuries of this particular material. Clearly \$400,000 per patient is not an
7 affordable price. There's about half a million people that could be treated with
8 this type of a procedure. We believe that the cost of isotope must be reduced to
9 about \$1,000 a curie if this procedure is going to be widespreadly available.

10 Other critical requirements for future production are the ability
11 to deliver short-lived isotopes, including alpha-emitters, and produce isotopes
12 which require neutron-based nuclear reactions for production.

13 I will give you a copy of my statement and a copy of our business
14 plan for the record.

15 Our examination of the current production infrastructure leads
16 us to believe it is not well suited to meet future requirements, especially in the
17 long-term. Planned and existing capacity is largely low-energy, neutron-based,
18 uses expensive enriched targets, and is not well designed for rapid retrieval,
19 separation and purification of very short-lived isotopes.

20 These are not the characteristics which will provide the large
21 quantities of new isotopes at reasonable price. As a result, unless those
22 objectives can be met, much of the current brilliant medical research will be
23 foregone.

24 We believe that many of the required medical isotopes can only
25 be produced in large quantities and low cost from an efficient, large-scale source

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1 of high flux, high energy protons and neutrons. Large flux equals lower
2 radiation costs. Protons and neutrons will allow for efficient production cycles,
3 which will result in a low cost for isotopes.

4 We are here today to speak in support of a new large cost-
5 effective production capacity to meet the future needs. We specifically support
6 the concept of DOE constructing and operating one or more neutron accelerators
7 as expressed in the Notice of Intent. We encourage DOE to consider a wider
8 range of options in the EIS, to include DOE support for new and large
9 production capacity that may have significant private sector participation.

10 Our rationale for this recommendation is first, that DOE has a
11 long and appropriate historical role in support of the leadership in domestic
12 production of isotopes. The market for new isotopes is still being developed.
13 There is a significant market risk, which will hinder the ability and enthusiasm
14 for timely private sector funding. The costs to start up and construct a new
15 large-scale production infrastructure are considerable and may be beyond the
16 ability of standalone private sector financing. DOE will have access to modern
17 facilities that can produce research isotopes, support nuclear and materials
18 research for less cost than if they built traditional Government-only facilities.

19 We think that DOE in this EIS ought to be looking at the
20 broadest possible range of options for meeting the national need, including what
21 DOE can do working with the private sector to look at jointly funded activities
22 as opposed to DOE-only activities, which we think is the sense of the PEIS right
23 now.

24 In summary, our examinations conclude that the current isotope
25 production infrastructure cannot meet the long-term needs for large quantities

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1 of low-cost isotopes. We are convinced that a new large irradiation facility that
2 can generate protons, neutrons, and other particles, and which can utilize less
3 costly production cycles such as natural targets, will be necessary to ensure that
4 the fruits of current medical research are fully realized. We recommend DOE
5 place priority on meeting this very long-term need in the proposed EIS.

6 Thank you for the opportunity to comment.

7 THE FACILITATOR: Thank you. Charlotte can get a copy of
8 your statement and your attachments there, if we could. Thanks.

9 Additional comments? Let's go to the back row. There's two
10 gentlemen. Go ahead.

11 MR. GARLAND: Hi. My name is Marc Garland. I became
12 interested in nuclear medicine several years ago. I am now working on isotope
13 production research at the University of Maryland.

14 I would like to congratulate DOE on undertaking a
15 comprehensive review of its nuclear science research and development needs
16 and capabilities. Such an assessment is essential to the continued development
17 of a broad range of extremely beneficial applications of nuclear science and
18 technology.

19 The specific Pacific Northwest National Laboratory's program
20 scoping plan and the subsequent Notice of Intent issued by DOE, do a good job
21 of defining the scope of nuclear research and development, identifying important
22 components of the programmatic environmental impact statement such as
23 isotope production for medical, industrial, and governmental use, materials
24 testing for purposes such as reactor lifetime extension, fusion research, waste

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1 transmutation, advanced nuclear fuel development, and nuclear non-proliferation.

2 The overall scope is adequate. However, I would like to address
3 some peculiarities associated with isotope production. Demand for medical
4 isotopes is more difficult to assess than other supply and demand issues. Two
5 important concepts must be understood to adequately assess demand. First is
6 that future demand is dependent upon current supply.

7 Also, future demand is dependent on future supply. The future
8 demand is dependent upon current supply because researchers cannot pursue
9 work with particular isotopes unless they are currently readily available.
10 Therefore, we must ensure the availability of research isotopes. Future demand
11 is dependent upon future supply because researchers won't pursue work with
12 particular isotopes unless they are projected to be available in sufficient
13 quantities for clinical practice. We must ensure that isotope production capacity
14 is sufficient to meet future needs.

15 Thus, the only way to assess which isotopes should be produced
16 and in what quantities, is to deal directly with the researchers themselves. Only
17 then can we identify an isotope production strategy to pursue rather than letting
18 current conditions dictate production for us. If we merely allow current demand
19 to determine future production, we will certainly not produce some of the most
20 desirable isotopes.

21 I am also concerned about the apparent requirement for isotope
22 production programs to operate on a cost recovery basis. Very few other
23 programs are forced to operate under such a constraint. I wonder why it is being
24 applied to isotope production. It is ironic that we operate the military at a loss
25 to kill people, yet we require isotope production to turn a profit to save people's

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1 lives. If cost recovery is to be a major factor, I encourage the Department to
2 look at a broader economic picture than its own budget.

3 Nuclear medicine, in addition to saving lives and otherwise
4 improving healthcare, has the potential to save this country billions of dollars in
5 Medicare and Medicaid expenditures. Therefore, we are dealing with million
6 dollar decisions that have billion dollar consequences. Unfortunately, the
7 organization making the decisions is responsible for the millions, while the
8 billion dollar benefits are realized elsewhere. I don't know how to overcome that
9 problem. I certainly hope that you do.

10 Cost recovery will also be enhanced by performing a more
11 comprehensive assessment of isotope demand than was possible in the three
12 months PNNL had to develop the program scoping plan. In particular,
13 substantially more interest has been shown in the area of cobalt-60 production
14 for commercial purposes. This could generate far more revenue than the scoping
15 plan took credit for.

16 In assessing options for meeting isotope demand, it is important
17 to consider several factors in the programmatic and environmental impact
18 statement. First has to do with facilities. Do they exist? Such as FFTF and
19 FMEF. Or are they pet projects that may or may not be realized? As Mr.
20 Magwood himself has said, it is unlikely that the Department would construct
21 another reactor, so the very existence of a facility is tremendously important.

22 Another consideration has worked for us in experience. Do the
23 production facilities have the workforce and experience necessary to have a high
24 degree of confidence in future isotope supplies? Hanford has demonstrated

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1 exceptional capabilities in these areas with its isotope production programs in
2 the past.

3 Third is waste disposal. In today's environment, it is critical to
4 have facilities available for the disposition of waste materials associated with
5 isotope production. Hanford has such a facility in U.S. Ecology's low-level
6 waste disposition facility.

7 THE FACILITATOR: Thirty seconds.

8 MR. GARLAND: I would also like to express concern for the
9 fact that there are insufficient funds in the fiscal year 2000 budget to perform the
10 programmatic environmental impact statement and maintain FFTF in standby.
11 Failure to provide sufficient funding will negatively predispose the decision of
12 the PEIS.

13 I am very optimistic about the outcome of the PEIS. Nuclear
14 research and development will be enhanced by the strategy crafted by this
15 document. Further, I'm confident that when a comprehensive assessment is
16 performed of the various needs for irradiation services, and that is evaluated in
17 the context of resources available to meet those needs, there will be one certain
18 conclusion. There is a compelling need for FFTF as an international irradiation
19 services user facility.

20 Thank you very much for the opportunity to provide input.

21 THE FACILITATOR: Thank you. If you have a copy of that
22 that Charlotte could get from you, she's back there. Thanks.

23 We'll go here, and then here with the gentleman in the green.

24 MR. TILLER: Thank you for letting me speak today. My name
25 is Robert W. Tiller. I represent Physicians for Social Responsibility, a national

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1 organization of more than 15,000 healthcare professionals working to create a
2 world free of nuclear weapons, and to address the health and environmental
3 legacy of nuclear weapons production. PSR is the U.S. affiliate of International
4 Physicians for the Prevention of Nuclear War, recipient of 1985 Nobel Peace
5 Prize.

6 Before I read my prepared remarks, I would like to respond to the
7 comments of an earlier speaker, Mr. Gallagher. Sir, your nasty insults demean
8 yourself more than anyone else. You degrade our body politic and our civil
9 society by your name calling. Your ad hominem arguments don't enhance your
10 position at all.

11 Now returning to my prepared text. Physicians for Social
12 Responsibility believes that any consideration of restarting the Fast Flux Test
13 Facility is a mistake, and urges the Department of Energy to shut down the FFTF
14 forever.

15 Let's be clear about one thing that is going on here. This scoping
16 process is actually an unseemly search for some sort of mission for FFTF, the
17 dogged pursuit of an excuse to restart the reactor. This is the wrong thing to do,
18 and DOE should stop going down this path.

19 Let me mention some reasons why FFTF should never be
20 restarted. First, nuclear waste at the Hanford Nuclear reservation is already an
21 enormous, some might say intractable problem, which DOE cannot deal with
22 properly. Two-thirds of our Nation's high-level nuclear waste can be found at
23 Hanford. That must be recognized as a significant threat to public health and the
24 environment. Restarting the FFTF would create more nuclear waste at the same
25 location, and exacerbate a bad situation.

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1 Second, leakage of radioactive materials into the groundwater is
2 also a big problem at Hanford, and restarting the FFTF can be expected to make
3 this problem worse, as well. The Hanford reach and the entire Columbia River
4 are already at risk from nuclear contamination. Do not make it worse by
5 restarting FFTF.

6 Third, the Tri-Party Agreement between the Washington State
7 Department of Ecology, the U.S. Department of Energy, and the Environmental
8 Protection Agency, makes cleanup, not nuclear weapons production or any other
9 production resulting in further contamination, the legal and official mission of
10 the Hanford reservation. DOE should stick to its agreement and not restart the
11 FFTF reactor.

12 Hanford cleanup is already bogged down due to a shortage of
13 funds. Restarting the FFTF would certainly lead to further diversion of funds
14 away from cleanup in order to feed the FFTF accounts.

15 Fourth. The FFTF is an inappropriate facility for medical and
16 industrial isotope production, as the Institute of Medicine concluded in its 1995
17 report, the most authoritative document on the issue. Even if there were a need
18 for a facility to produce such isotopes, which is highly questionable, it makes no
19 sense to spend immense sums of money on the FFTF in order to produce a few
20 isotopes which could be produced more cheaply elsewhere.

21 Dr. Kenneth Krohn, a distinguished professor of radiology and
22 chemistry at the University of Washington, has clearly stated his opposition to
23 restarting the FFTF under the guise of a need for radionuclides for production
24 in research.

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1 Fifth, for more than 50 years, this Nation has maintained a strict
2 barrier between nuclear weapons production and civilian nuclear facilities. That
3 barrier would likely be a casualty of FFTF as restarted, because one leading plan
4 is to use MOX fuel, that is, plutonium, in the reactor. Such a complete blurring
5 of the distinction between military and civilian nuclear facilities would be the
6 object of our mistrust and scorn if it were to occur in Iraq or in other of the so-
7 called rogue states. Just because we believe our intentions are honorable and
8 transparent does not justify the use of plutonium for civilian purposes. The
9 barrier between military and civilian nuclear activities should remain firm.

10 Sixth, the use of plutonium in FFTF in order to create isotopes
11 would create additional unnecessary risks of nuclear materials theft in nuclear
12 proliferation. Plutonium should not be regarded as a resource to be used in
13 commercial pursuits.

14 Seventh. Restarting FFTF now would send a wrong signal to the
15 international community of nations. The FFTF clearly has potential to
16 contribute to accelerated nuclear weapons production, so other nations are
17 watching closely to see what this country does. The U.S. is already the world's
18 leading nuclear weapons state, having performed more nuclear weapons tests
19 than all other nations combined, and currently possessing a nuclear arsenal far
20 more powerful than those of other nations.

21 Even with this huge advantage, our Senate refused to ratify the
22 Comprehensive Nuclear Test Ban Treaty, with many Senators asserting that
23 nuclear weapons are essential for our security. The international community is
24 now wondering about our nuclear weapons intentions, and FFTF stands as a big

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1 question mark. One step that we can take to reassure both allies and adversaries
2 about our nuclear weapons intentions is to shut down the FFTF for good.

3 I am pleased to mention that on October 25, 1999, just two days
4 ago, the City Council of Seattle, Washington, unanimously adopted a resolution
5 opposing the restart of the FFTF as well as plutonium processing at Hanford.
6 In doing so, it joined the Oregon legislature, the Portland City Council, and
7 many other groups that have declared their opposition to restarting the FFTF.

8 The Seattle City Council noted that the FFTF reactor would use
9 plutonium imported from elsewhere, creating health and environmental risks for
10 those who live and work near the transportation routes involved. The Council
11 wisely urged that the funds saved by shutting down the reactor be used for
12 protection of public health and the environment in the region through cleaning
13 up the nuclear mess at Hanford, which is guaranteed in the Hanford cleanup
14 agreement. Decision makers at DOE should heed this thoughtful statement from
15 the elected officials of a major city not far from the FFTF.

16 Finally, if DOE does decide to go forward with its inappropriate
17 and misguided search for a reason to restart the FFTF, it should do a facility-
18 specific environmental impact statement. A programmatic environmental
19 impact statement is not enough because there are key issues related to this
20 specific facility that must be addressed in advance.

21 Thank you.

22 THE FACILITATOR: Copy? Thank you. I appreciate it.

23 Yes, sir?

24 MR. LEE: Hi. My name is Hyun Lee. I am with Heart of
25 America Northwest. Heart of America Northwest is the Pacific Northwest's --

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1 one of the largest Hanford citizen watchdog groups dedicated to maintaining the
2 region's quality of life through promoting public education and involvement
3 regarding Hanford cleanup.

4 Before I start with my own comments, I would like to respond
5 to Mark Garland's comments earlier. I tend to disagree, that Hanford has shown
6 that U.S. DOE Richland has been less than competent in dealing with --

7 THE FACILITATOR: I'll just have you talk a little bit more into
8 the microphone. We're having trouble picking it up. Thank you.

9 MR. LEE: Okay. Our concern is that U.S. DOE Richland has
10 shown that it has been less than competent in terms of dealing with waste
11 disposal there. We're talking about a situation at Hanford where they have got
12 177 storage tanks. Sixty-nine of them are leaking waste into the groundwater.

13 If FFTF is restarted, we have documentation that shows that
14 some of the high-level waste will be going to those same tank farms. U.S.
15 Ecology is a strictly low-level burial ground. That would only deal with some
16 of the waste. It wouldn't deal with the mixed waste or the high-level waste that
17 would come out of FFTF restart.

18 Going back to my own comments, first, we found that it was
19 unclear whether this PEIS would be a one-step process or if there will be a site
20 specific study following the PEIS. A lot of our members were unclear about
21 what the actual process would be.

22 Second, the PEIS does not mention anywhere whether FFTF will
23 be externally regulated by the Nuclear Regulatory Commission. This would
24 seem to violate Secretary O'Leary's commitment to have U.S. DOE civilian
25 research reactors externally regulated as in their statement in December of 1996.

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1 Third, we think the PEIS must address where the waste from
2 FFTF will be sent and which we think will be the tank farms, and the fact that
3 U.S. DOE Richland is already behind in terms of the TWRS vitrification
4 process. Right now, I mean the TWRS vitrification plants are way behind
5 schedule in terms of TPA deadlines. So where are the wastes going to go from
6 FFTF if not into those tanks, and that those tanks are already almost full to
7 bursting, as the New York Times article on SY101 demonstrated.

8 We also oppose FFTF restart because it has already gobbled up
9 tens of millions of dollars in desperately needed cleanup funding just by keeping
10 it on hot standby.

11 The PEIS's no action alternative does not include actually
12 decommissioning FFTF at this point. Keeping it in hot standby will mean
13 another \$30 to \$40 million will be diverted from needed cleanup to keep this
14 thing just to have hot sodium going through it.

15 In light of the fact that TPA protocols were violated and no
16 alternative presentations at the Seattle hearings were allowed, Heart of America
17 Northwest will seek to block issuance of hazardous waste disposal permits if
18 FFTF is restarted.

19 Finally, the PEIS does not propose to examine what the
20 environmental impact of FFTF's restart will mean in terms of other on-site
21 facilities, FMEF, what it would mean in terms of a mini-Hanford being restarted.
22 We think those are all things that should be taken into consideration in the final
23 EIS.

24 THE FACILITATOR: I appreciate it.

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1 Can I see a show of hands of people who still want to remain to
2 comment? Okay. We'll start right here with the gentleman, and work one, two,
3 three, right back. Okay? Thanks.

4 MR. WALTER: My name is Allan Walter. I guess I'm kind of
5 wearing three different hats here. That may be why the ballpark back here is
6 starting to show. But I would like to support the FFTF restart kind of from three
7 different viewpoints.

8 One is, wearing the hat as the president of Eagle Alliance, this
9 was an organization started about four years ago to preserve and enhance nuclear
10 science and technology for the benefit of humanity. We mean this in a very,
11 very deep sense. There are many, many applications of nuclear technology that
12 are very, very important. In fact, this morning we had a briefing at the invitation
13 of Members of Congress on nuclear medicine, and some very competent people
14 from the Society of Nuclear Medicine. One of the big concerns expressed was
15 the availability of medical isotopes. FFTF is very, very well situated to serve
16 that need, and I think this has tremendous humanitarian implications.

17 Second hat is I have had the opportunity to spend many of my
18 career years at FFTF. I have toured the world many times in conjunction, as
19 being president of the American Nuclear Society. I must say that I have never,
20 ever in any technical setting heard a disparaging remark about FFTF in terms of
21 its technical excellence. It is recognized worldwide as the premier facility.

22 There have been questions about what it costs to operate. But
23 always there is a feeling of -- or I have found, at least in the technical world,
24 sometimes there is competition. But FFTF is the crown jewel. It would be an
25 incredible tragedy, not only for our country, but for the world, to lose this.

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1 The third is wearing a hat as Head and Professor of Nuclear
2 Engineering at Texas A&M University. I am fairly new there. I have just been
3 there for about a year-and-a-half. I can tell you that it's very, very difficult to get
4 the brightest students in our Nation to go into this technology because they think
5 it's been dying. Now fortunately, we have been able to turn this around.

6 In the last year at Texas A&M, we have reversed the national
7 trends, so that whereas the enrollment has been going down about 60 percent in
8 the last five years, our class this year is up 65 percent, because there is a
9 realization among the students that there in fact is a future here. But we can't
10 maintain that if we don't have something to look forward to.

11 I personally feel that because the first nuclear era is essentially
12 over in this country, that there is an obligation because of the implications on the
13 part of the Government to step in and partner with the private sector, to build a
14 new commercial-type plant, a new generation-type system. But that is very
15 expensive. A far cheaper thing, at least in the interim, will be to take this crown
16 jewel that is highly recognized around the world, and restart it. That is
17 symbolic. I can't begin to tell you of the importance of that in terms of turning
18 on the fire and the imagination of our young people.

19 This is a technology that does require the brightest and the best.
20 We don't want the C and the D students here. We want the A and the B students.
21 We have got an opportunity to do it. To me, the symbolism alone associated
22 with restart of FFTF will pay off in ways that I don't think we can even begin to
23 imagine.

24 Finally, just a footnote. I do know that there are concerns about
25 cost. I would strongly urge the group in the PEIS to recognize that there is

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1 private money available to work in partnership with the Government if that is an
2 issue, to help make this go. It's something I think that's absolutely vitally needed
3 for the future of America and the future of the world. Thank you.

4 THE FACILITATOR: Thank you.

5 MS. CRANDALL: Thank you. I am Katherine Crandall, with
6 the Alliance for Nuclear Accountability. I do really feel some sympathy for
7 Colette, especially I know you're not feeling well. I appreciate you sitting here
8 listening to all of our comments.

9 The Alliance for Nuclear Accountability is an alliance of over 30
10 local, regional, and national organizations representing the concerns of
11 communities living in the shadows of the U.S. nuclear weapons complex sites.
12 We are unequivocally opposed to the restart of the Fast Flux Test Facility at
13 Hanford for any purpose. We are especially concerned about the process that
14 has led up to this programmatic EIS, and believe that this PEIS is built upon a
15 fundamentally flawed foundation.

16 There have been a series of studies and tenacious efforts from
17 various FFTF supporters to maintain this reactor for practically any conceivable
18 use. Going back to 1996, which is not coincidentally the year that the reactor was
19 supposed to go into shutdown, there is a record of multiple efforts, studies and
20 proposals to run FFTF, initially for tritium production and medical isotopes, and
21 then it's morphed to a number of other things. In fact, this latest 90-day study
22 which was undertaken by Battelle Labs, which is probably the likely contractor
23 for running FFTF, is a very impressive fishing mission. It uncovered a number
24 of potential uses for FFTF.

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1 But the process has been backwards and inappropriate leading
2 up to this EIS. The process was started with a question of if we operate this
3 facility, could you find a use for it. It's not surprising that that process did
4 determine not needs, but established a number of desires of particular interests
5 to use the facility.

6 If there were a particular discrete programmatic need, then there
7 should be a separate PEIS for that programmatic need. Instead, what we have
8 is a lumped together myriad of possible programmatic nuclear infrastructure
9 desires which all focus on one facility. I feel that the result is a mockery of EIS,
10 and the public process is transparently driven by pro-FFTF interests, and I think
11 undermines DOE's credibility.

12 However, that said, the Alliance for Nuclear Accountability does
13 want to take this opportunity to help this process along, and to restate our strong
14 opposition to the restart of FFTF, and to urge that DOE move immediately to a
15 shutdown of this facility.

16 I would just like to note that under the current Tri-Party
17 Agreement, which is the legal binding agreement for Hanford, the facility is to
18 be shut down and deactivated. So I am a little confused as to why the no-action
19 alternative does not reflect that. I think that that's a legal requirement.

20 We are opposed to the restart of FFTF. We have been opposed
21 to it for tritium production, and certainly continue to oppose it for any use of
22 weapons-related purposes. We also oppose it for the production of plutonium-
23 238 for NASA's space program, and we oppose the operation of FFTF for the
24 purpose of supporting national-international fusion energy experiments. We
25 oppose it for the developments related to any kind of accelerator transmutation

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1 of waste. We oppose it for the production of a sort of nuclear isotope candy
2 store for a number of different interests, including food irradiation.

3 We oppose it for basically three reasons. We are concerned that
4 running FFTF dramatically violates Hanford's cleanup mission. We are
5 concerned about the proliferation concerns that FFTF raises. We are also
6 concerned about the safety issues at FFTF.

7 I am going to focus mostly on the cleanup issues, if I don't run
8 out of time. Running FFTF is in direct violation of the agreed-to cleanup
9 mission. You can't do production at the same time that you do cleanup, without
10 greatly complicating cleanup. Running FFTF would spend taxpayer funds to
11 add to Hanford contamination. FFTF operation would certainly add new waste
12 streams, and push existing groundwater contamination plumes closer toward the
13 Columbia River. More waste would be added probably to Hanford's leaking and
14 potentially explosive high-level nuclear waste tanks.

15 In addition to the FFTF facility itself, additional facilities are
16 likely to be developed to support FFTF. In turn, these can lead to additional
17 production missions later. For example, storage facilities or testing facilities
18 such as the FMEF, could be developed to support further future production
19 activities.

20 New nuclear waste and materials would be transported to
21 Hanford to run FFTF for the fueling, and also for other purposes like the
22 neptunium-237 that would be used for plutonium-238 production. Meanwhile,
23 the cleanup needs at Hanford, which are severe and complicated and expensive,
24 including the K-basins and the tanks would end up competing for funds with
25 FFTF and these related production facilities.

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1 I would just like to note that already maintaining FFTF on hot
2 standby has tossed large sums of money, hundreds of millions of dollars, and
3 this year is slated to cost another \$28 million. This is a problem that we have
4 across the complex of the facilities that run out of a mission, being left, and the
5 mortgage costs, so-called, of what we're paying for takes away money from
6 needed cleanup progress.

7 In contrast, there was a facility, the Purex facility at Hanford,
8 which expedited their deactivation and decommission. As a result, will save
9 over \$200 million over a 10-year period. That money can be put into urgent
10 cleanup projects at Hanford. That is the path that we believe FFTF should be on.

11 How am I doing on time?

12 THE FACILITATOR: Three minutes.

13 MS. CRANDALL: Okay. I am going to just say that we are
14 concerned about the proliferation issues. Other people will elaborate on that.
15 It's not only the fuel issues that concern us, and the last time I checked,
16 importing highly enriched uranium and plutonium was not in keeping with U.S.
17 nonproliferation policy. But we are also concerned about the possible defense-
18 related activities which may evolve at this facility. While I understand that it's
19 not now being considered for tritium production, everybody and their brother
20 knows that it could be used for tritium production. I think that the current
21 defense programs could also come up with some interesting uses for FFTF.

22 We are glad that you are pursuing a nonproliferation study. I
23 hope that that will be done carefully in conjunction with us to adequately involve
24 public participation.

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1 In addition to the proliferation concerns, I would like to highlight
2 some of the safety concerns, and just reiterate or support the comments that
3 Wenonah Hauter made, and state that when FFTF was running, it did not have
4 a stellar safety record. In fact, from 1985 to 1988, there were 25 occurrences
5 caused by workers intentionally not using prescribed reactor safety procedures,
6 and more incidents resulted from unanticipated problems, incomplete training,
7 or preoccupation of the mind.

8 I think that the recent Tokai accident is a quite grim reminder of
9 just how dangerous the safety violations with these kind of nuclear materials can
10 be. I would therefore urge you to shut down FFTF. But barring that, I do
11 encourage you to pursue the commitment that Hazel O'Leary had made to pursue
12 external regulation for these reactors, not only for FFTF, but for the other
13 alternatives, accelerators, and reactors that may be developed, should come
14 under external regulation. Thank you.

15 THE FACILITATOR: Thank you.

16 In the back row. After that, I think there's a gentleman here.

17 MR. CLEMENTS: My name is Tom Clements. I represent the
18 Nuclear Control Institute, which is an institute based here in Washington,
19 concerned with the proliferation of nuclear materials, plutonium and highly
20 enriched uranium. We are not against production of medical isotopes, neither
21 are we an anti nuclear organization. But we support the production of isotopes,
22 keeping in mind nonproliferation goals.

23 Unfortunately, the process we are going through now as has been
24 said before, is really to find a mission for the FFTF breeder reactor, which is a
25 relic of the Clinch River breeder program. I noticed the charts back here didn't

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1 point that out. This reactor was built as a part of the breeder program in the
2 United States. Once under the Reagan Administration the program went down,
3 it really had no mission. So it has been floundering for a mission since the early
4 1980s. The idea has been hit upon that it could be used to produce medical
5 isotopes. We don't think it is a suitable facility for that.

6 Around the world, breeder programs have failed. The breeder
7 program is essentially dead in France. It has been terminated for many years in
8 Germany and Britain. In 1995, the Monju reactor had a severe accident. In fact,
9 FFTF was used to test Monju breeder reactor fuel. I think people should know
10 of its role in the international breeder establishment.

11 For the fact that it is a breeder reactor, we don't want to see it
12 restarted. We think that this would send the wrong signal internationally. At a
13 recent nuclear energy research advisory committee meeting at the end of July,
14 officials from both France and Japan testified that FFTF does have a role
15 connected to their breeder programs. The Phoenix reactor was cited by the
16 French official and the Joyo reactor, which was involved in the recent criticality
17 accident in Japan, was cited as having a work role to do with the FFTF. It wasn't
18 for medical isotope production that they were concerned.

19 So we believe that the reactor should be shut down. Once the
20 ABR-2 reactor at Idaho was closed, this will be the last breeder reactor in the
21 United States. For nonproliferation reasons, it should be closed.

22 DOE has been very sketchy about discussing where the fuel
23 would come from for this reactor. It has been said that MOX would be imported
24 from Germany, but DOE hasn't really clarified what this material is. This is an
25 old breeder reactor fuel that was made for the SNR-300 reactor, the Calcar

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1 reactor at Carlsrua. This material contains both non-U.S. origin and U.S.-origin
2 plutonium. So to say that it's going to be imported in the United States involves
3 a big change in U.S. nonproliferation policy. We don't believe that a non-
4 proliferation study by DOE's Office of Nonproliferation is going to be sufficient.

5 Most of us are familiar with the importation of highly enriched
6 uranium from research reactors around the world. The EIS process for this took
7 many years. If this material is brought in without doing a proper policy analysis
8 and EIS process to itself, then this is a grave injustice to U.S. nonproliferation
9 policy. We may hear more about this on the legal front if there is not a full EIS
10 done on importing foreign origin plutonium and U.S. origin plutonium into the
11 United States.

12 Also, the German public has not spoken on this. I have spoken
13 to some people in Germany as well as a member of the Bundestag, a
14 representative, a staff assistant to the Bundestag. They don't know about this.
15 The German public has not been apprised that this might happen. Due to the
16 fact that it contains weapons-useable plutonium that would have to be shipped
17 over land in Germany under armed escort, it would have to be shipped on
18 dedicated vessels with an armed military transport vessel because it is illegal to
19 fly plutonium into or over the United States. So the material will have to go by
20 sea. This is going to be a very controversial program internationally. Once the
21 German public gets wind of this, I don't know if the idea to use MOX from
22 Germany is going to go anywhere, just from the German and EU perspective.

23 Also, if this fails, I have spoken to people in the Office of Fissile
24 Material Disposition in DOE. They have not been requested in any way to
25 provide MOX for this reactor in case the German MOX program, the

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1 importation goes down. If they were to build a line to make MOX for FFTF at
2 the Savannah River MOX plant, if that is built, it would be very expensive and
3 delay the MOX program itself, but they have had no requests. So I am a little
4 concerned about who in DOE is talking to other people inside the Department
5 about the fuel problem here.

6 Also, there is perhaps another graver fuel problem that DOE has
7 thrown on the table without any explanation, is to use highly enriched uranium
8 in the reactor after year 20 of its operation. Well, use of HEU in research
9 reactors is strictly against U.S. nonproliferation policy. The RERTR program,
10 the Reduced Enrichment for Research and Test Reactors which my institute has
11 worked very diligently on over the years, the goal of that program is to convert
12 reactors to LEU, to low enriched uranium, both as a fuel and a target. But yet,
13 DOE is presenting a program here that would erase the successes of the RERTR
14 program.

15 We are on the verge of eliminating the use of HEU in research
16 reactors around the world. Yet DOE is making a proposal to backtrack on
17 everything it has done over the last 20 years to convert reactors away from HEU.
18 So that there may be no source of HEU in the United States. I spoke with
19 someone at one of the labs today who works on this issue. They have not been
20 requested to come up with any targets or HEU fuel for the reactor. So I am quite
21 baffled that this has been presented. I think there has been no discussion about
22 it presented because there is no place to get the fuel. To violate U.S. non-
23 proliferation policy by fueling this on HEU is going to be unacceptable. We will
24 be heavily involved in that fight.

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1 I don't know, is the fuel going to come from Russia? They are
2 one of the ones left involved in the HEU market. I would like to know if DOE
3 is proposing to purchase HEU and import foreign HEU to operate the reactor.
4 I certainly don't think that is going to fly.

5 So for those nonproliferation reasons, the Nuclear Control
6 Institute is firmly against the continued operation or the operation of FFTF, and
7 believes that it should be immediately shut down, though we certainly are in
8 support of a genuine search to make sure that this country has adequate medical
9 isotope to serve its needs.

10 I want to leave a couple of things for the record. I am finalizing
11 my comments. I have a letter of April 27 that we wrote to Secretary Richardson,
12 calling for FFTF not to be restarted, and also a paper that was presented by the
13 Nuclear Control Institute at the RER meeting in Budapest in September, where
14 we present a phase-out plan for use of HEU and for medical isotope production
15 in reactors around the world.

16 I will be glad to mail anybody one of these documents, who
17 wants to see that we do believe that medical isotope production is acceptable,
18 except with low enriched uranium targets.

19 Thanks very much.

20 THE FACILITATOR: Thank you.

21 MR. CARTER: Jim, Colette, thanks for letting me speak. My
22 name is Gary Carter. I am president of Strategic Energy Resources Incorporated,
23 in Lynchburg, Virginia. I would like to first compliment all the previous
24 speakers and their passions. I certainly admire all of you for getting up and

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1 saying what you want to. For a cut and dry old engineer, it's kind of hard, and
2 good to hear that for a change.

3 Colette, I have submitted previously some comments to the DOE
4 on Pu-238 production in commercial light water reactors. Basically I would like
5 to just get on the record today a couple of comments regarding the possible
6 production of certain long-lived nonfissionable isotopes in commercial reactors.

7 Basically I noted the Secretary's ability to select the best of the
8 alternatives. I would really like to say that I feel that the short-lived medical
9 isotope production capability in the future need is critical, and a commercial
10 light-water reactor may not be well suited for that.

11 So hopefully the DOE will address that need in a very serious
12 manner, but I also hope that you will realize that the commercial light-water
13 reactor industry is receptive and capable of producing certain types of long-lived
14 isotopes, especially nonfissionable benign isotopes, that don't have military
15 applications.

16 With deregulation and other financial woes besetting all the
17 nuclear power plants and operators in the country, they certainly are on the
18 lookout for additional sources of income, and have the capability to do that.
19 Strategic Energy Resources has a patent pending right now for the reflector
20 region production of these types of nonfissionable isotopes. That would include
21 things like, unfortunately, tritium, but also plutonium-238, cesium-137, cobalt-
22 60, and a number of others.

23 These isotopes obviously have potential uses and the
24 Department's goals for privatization and enhancement of the nuclear power
25 industry may be considered. I certainly hope that the Secretary will consider in

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1 his options the need not just for medical isotopes, but also the sustainment of the
2 nuclear power industry in this capability. Thank you very much.

3 THE FACILITATOR: Thank you. Yes, sir, over here.

4 MR. DEAL: My name is Joe Deal I am speaking on behalf of
5 the president of Food Irradiation, the Food Safeguards Council, Mr. Raymond
6 Meranti, who could not be here today.

7 We would like to speak in support of having an adequate supply
8 of isotopes for food irradiation. The use and benefit of radioisotopes and the
9 wide variety of applications is one of the more pleasant success stories resulting
10 from nuclear technology today. While there has been a slowdown in
11 construction of nuclear electric power generating plants in the U.S., the use of
12 radioactive materials continues to increase, resulting in the creation of more than
13 three-quarters of a million jobs and 100 billion of gross domestic product.

14 More importantly, radioisotopes are used to perform tasks that
15 provide enormous social benefits to mankind, tasks that in many cases cannot
16 be effective when done using chemicals or other mechanical or electrical
17 processes.

18 We would like to focus on the application of isotopes used to
19 increase the quality and safety of food, a technology known as food irradiation.
20 Today there is an overwhelming body of scientific evidence that shows
21 irradiation food is a safe and effective means of destroying harmful bacteria in
22 food and extending the shelf life of a wide variety of products.

23 While the technology has been known for more than 35 years, we
24 have not yet seen the emergence of a viable commercial industry with
25 widespread use of food irradiation. There are, however, signs that such an

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1 industry may now be emerging. Through consumer education and understanding
2 of this technology, food irradiation could become an important tool in assuring
3 food quality.

4 As we move into the direction of having a radiation food
5 program, it is important that we have an isotope program to support it. We
6 believe that DOE should make an estimate of what isotopes it would take to
7 support an expanded food irradiation option, and have it figured into their
8 infrastructure program.

9 In conclusion, we should be remembering that the U.S. led the
10 world in the development and developing nuclear technology, and this
11 technology has clearly provided benefits throughout the world. While the vast
12 amount of pollution-free electricity is produced by nuclear energy, spinoff
13 technologies from both the electric power industry and the weapons program
14 have produced enormous benefits for society.

15 The use of radioisotopes is a \$300 billion industry involving four
16 million people. This effect should continue to be supported and the leadership
17 of the U.S. maintained so we will not have to depend on other countries to
18 purchase or to produce our needed isotopes. Thank you.

19 THE FACILITATOR: Thank you.

20 Additional comments from anyone at this time? If not, we will take a
21 recess or adjournment. We will be up here for a little bit of time until the 5:00
22 hour. Thank you for coming and providing your comments. We appreciate it.

23 If you think of a couple comments here at the end you would like
24 to get on the record, our court reporter will be here for another 15 or 20 minutes
25 or so to get those on the record. We can just read them right in.

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1 So thank you. If you have copies of your documents, we would
2 love to get them. There is material out there to pick up.

3 Evaluation forms, if you drop them off to Charlotte, our
4 comment form is out there as you head out. Appreciate it.

5 (Whereupon, at 4:46 p.m., the proceedings were concluded.)

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Before: U.S. Dept. of Energy

Date: October 27, 1999

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represents the full and complete proceedings of the aforementioned matter, as reported and reduced to typewriting.

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